CLAIMS

1. A multi-chip package comprising:

at least two semiconductor chips vertically mounted on a substrate and encapsulated with a mold resin; and

a soft element located at an interface between at least one of the at least two semiconductor chips and the mold resin, the soft element being more elastic and flexible than the mold resin.

2. The multi-chip package of claim 1, wherein the soft element contacts substantially the entire surface of at least one side of the at least one of the at least two semiconductor chips.

3. The multi-chip package of claim 1, wherein the soft element contacts a portion of at least one side of the at least one of the at least two semiconductor chips.

4. The multi-chip package of claim 1, wherein the soft element contacts substantially the entire upper surface of an uppermost chip of the at least two semiconductor chips.

5. The multi-chip package of claim 1, wherein the soft element contacts a portion of an upper surface of an uppermost chip of the at least two semiconductor chips.

6. The multi-chip package of claim 1, further comprising an adhesive applied for adhesion between the substrate and the at least two semiconductor chips, wherein the soft element is configured to increase vertical mobility of the semiconductor chips against a load of the adhesive applied to the semiconductor chips upon cooling.

7. The multi-chip package of claim 1, wherein the soft element comprises one selected from the group consisting of an elastomer and an epoxy resin.

8. The multi-chip package of claim 1, the package further comprising:

solder balls as terminals for connecting the package to an external circuit.

9. The multi-chip package of claim 1, wherein the substrate comprises one selected from the group consisting of a printed circuit board (PCB) substrate and a polyimide substrate.

10. A device comprising:

at least two semiconductor chips stacked on a substrate;

a soft element formed on a surface of at least one of the at least two semiconductor chips; and

an encapsulant covering the at least two semiconductor chips and the soft element, the soft element configured to reduce the constrictive force of the encapsulant on the surface.

11. The device of claim 10, wherein the surface comprises substantially the entire surface that is contained by a single plane.

12. The device of claim 10, wherein the surface comprises a part of substantially the entire surface that is contained by a single plane.

13. The device of claim 10, wherein the encapsulant comprises one selected from the group consisting of an elastomer and an epoxy resin.

14. A method of manufacturing a multi-chip package, comprising:

vertically stacking at least two semiconductor chips on a substrate;

bonding a bond pad on at least one of the at least two semiconductor chips to a bond finger on the substrate with a bonding wire;

forming a soft element on at least one side of at least one of the at least two semiconductor chips; and

encapsulating the at least two semiconductor chips and the soft element using a mold resin.

15. The method of claim 14, wherein forming the soft element comprises:

forming the soft element on substantially the entire surface of the at least one side.

16. The method of claim 14, wherein forming the soft element comprises:

forming the soft element on a portion of the at least one side.

17. The method of claim 14, wherein forming the soft element comprises:

forming the soft element on substantially the entire upper surface of an uppermost one of the at least two semiconductor chips.

18. The method of claim 14, wherein forming the soft element comprises:

forming the soft element on a portion of an upper surface of an uppermost one of the at least two semiconductor chips.

19. The method of claim 14, wherein forming the soft element comprises:

forming the soft element to cover the bonding wire, to cover a contact area between the bonding wire and the bond pad, and to cover a contact area between the bonding wire and the bond finger.

20. The method of claim 14, wherein the soft element comprises one selected from the group consisting of an elastomer or an epoxy resin.